UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue
Seattle, WA 98101

Reply To
Attn Of: ECL-115

January 22, 2007

Tom Gainer
DEQ Northwest Region
Portland Harbor Section
2020 SW Fourth Ave., Suite 400
Portland, OR 97201

RE: EPA comments on *Assessment of McCall Oil and Chemical Site Impacts to the Willamette River* (September 2006)

Dear Mr. Gainer:

EPA has reviewed the above referenced report and provides the following comments to DEQ as the lead agency for the uplands portion of the Portland Harbor Superfund Site. This document was reviewed as to whether the site had historical releases, has current releases, or has the potential for future releases. While the report attempts to make the case that contamination at the site is limited and does not impact the river, there are a number of issues which seem to conflict with those statements, as discussed in these comments and which should be resolved before EPA accepts the conclusions in this report.

General Comments

1. While this report is based on a number of other documents and studies, it is a document which summarizes all that information for the site. The report does present different types of data and the locations where the data were obtained in relation to the river setting; however, one key problem seems to be that the report narrowly frames the environmental concerns as to what affects the sediment contaminant accumulation in the river. While sediment is one major issue for the river environment, there are also the concerns of ecological and human health risks that may include, but not limited to, water quality from discharges of sources to the river.
2. Conclusions of the report are based on several different water or sediment quality criteria, but one of the major criteria that the EPA and ODEQ are using for the river, the *Joint Source Control Strategy*, which is referenced in the report (page 31), does not seem to be used in Table 13 which is the main screening table. The JSCS screening numbers are the primary criteria for sources to the Portland Harbor site.

3. The report indicates that site has plumes of contamination, but there are areas which may be beyond the control of the existing extraction containment system. Since the only control for contamination in the uplands ground water is the existing extraction containment system, a "Capture Zone Analysis" should be done to document that the ground water contamination plumes are controlled. This is also related to the issue that the characterization seems to concentrate on monitoring wells, but when the push-probe type data (presented in the back of the report, in Appendix A) are used in conjunction with the monitoring and extraction wells, the concentrations and spatial areas of contamination do not seem to be the same. It would be better to have that all the available data used to develop a more general assessment of the areas of contamination.
4. The report plainly makes statements that LNAPL is stable at most locations over time; that dissolved metal concentrations are below the chronic criteria in shoreline wells; and that there are no problems with the stormwater discharges. In a similar manner it should state and discuss in the VOC section how there are a number of high concentrations of several VOCs and metals in the ground water. While VOCs are somewhat presented in Figure 12, it is not complete, and the issue does not get discussed explicitly in the text.
5. It is not clear from the report whether sampling and analyses for major ions has been done at the site. The reason this may be important is that common minerals, such as iron and manganese, may become a problem when contamination at the upland site disturbs the geochemistry of the soils and ground water, and release these minerals from the formations in excess of what they would normally be released without the contamination. In the case of manganese, the reports from the Portland Harbor group (LWG) indicate that manganese values, above water quality criteria, seem to be a common problem in the area. Since there is significant TPH contamination in the uplands, this may be causing other releases at the site.
6. The report states that "Of primary concern to this report are the ecological receptors for the Willamette River". Therefore, the only screening values used in the report for all of the media (sediment, groundwater, and stormwater) are those for ecological receptors. The report ignores any potential impacts on human health and does not include screening values for human health (e.g., WQC for fish consumption, MCLs, tapwater PRGs) that are listed in the JSCS. The report needs to consider impacts on human health to be consistent with the approach used for the Portland Harbor Superfund site.
7. Rather than screening for potential bioaccumulation impacts for ecological receptors and humans (using the JSCS values for bioaccumulation and the latest ODEQ proposed regulations for bioaccumulative compounds), the report states that "bioaccumulation is a watershed scale issue" and provides a comparison of "average COI concentrations and flows at the site relative to other sources of contaminant loading in and around the harbor". This approach is unacceptable since it is not consistent with the approach being used for the Portland Harbor Superfund site.
8. For sediment screening, much of the PH RI Hyaella data were excluded and only the Level 1 Floating Percentile method was used. Also, AETs and PECs were used for screening. The TECs listed in the JSCS were not used because they "exhibit unreasonably high false positives error rates and low reliability". EPA does not agree with these decisions.
9. For screening of groundwater in Table 13, it appears that the appropriate JSCS values have not always been used. In addition, the screening and subsequent discussions of both

groundwater and stormwater data are based on dissolved metals, not totals. Total metals concentrations are well above the screening criteria for some constituents. Stormwater constituents (dissolved data only) that are above the screening values are dismissed as being of no concern because they are "near or below naturally occurring background", "below ambient urban run-off", or "NPDES stormwater benchmarks". Natural background numbers have not been established for the water column and the document does not include information regarding the particulate fraction in the stormwater discharge, which is of concern to the Portland Harbor Superfund site.

10. Some of the TPH values in wells next to the river are high (e.g., 35,000 µg/l for diesel, 23,000 µg/l for heavy fuel oil, and 1100 µg/l for gasoline in MW-8). Stormwater values are also elevated (e.g., in S-3W, 1300 µg/l for gasoline and 1,000 µg/l for heavy fuel oil; 1,300 µg/l for diesel in S-4w). Unfortunately, there are no TPH screening levels in the JSCS for water so only individual PAHs were used in the screening table which would miss much of the mixture. The text states that "TPH concentrations at the site were also screened using DEQ's "Risk Based Decision-Making for the Remediation of Petroleum-Contaminated Sites" (DEQ TBDM; DEQ 2003) in groundwater. However, this is not cited in the screening table. The DEQ RBDM numbers are not protective of groundwater, terrestrial receptors, or in-water receptors. The DEQ UST numbers (TPH-G value of 80 ppm, and TPH-D/TPH-O of 500 ppm) would suffice as adequate screening numbers. The ERAs for EPA and DEQ at Portland Harbor are still struggling with developing TPH numbers for in-water, but it looks as though they may be higher than these numbers based on current discussions. Given that there are such high levels of TPH in a well next to the shore (MW-8), it is difficult to believe that source control has been achieved. Also, there are no analyses for BTEX constituents provided in the report which is of concern given some of the high gasoline levels in MW-8.
11. A limited list of constituents was approved by ODEQ for the RI Workplan. For example, although benzene, toluene, ethylbenzene and xylene are listed as COIs for groundwater on page 7, no data are presented for these compounds in the screening table nor are they listed on page 9 as COIs identified for investigation by ODEQ. Thus, it is unclear if these COIs were not analyzed for or if they were just never detected. Also, it is stated on page 8, "On pages 2 and 3 of the Agreement, the agency listed the following compounds that exceeded baseline conditions, based on the WESTON data, established for the PH study Area." This criteria ("those constituents exceeding these "baseline levels") was a major one used to define COIs testing in the upland RI. It is not clear how this latter decision regarding baseline was made.
12. The report does not provide any data that support the statement that there are "Two areas of chlorinated solvent groundwater contamination." Also, although none of the groundwater data, including VOC and PAH data from wells close to the river, were screened against the human health WQC, MCLs, or PRGs, some are already at or above a the JSCS screening values for a few human health parameters (e.g. vinyl chloride); this is also true for stormwater samples. It is not clear from the report that VOCs (e.g., near MW 6) are being captured or that levels of breakdown products (e.g., vinyl chloride) will not increase above the levels already found along the shoreline.

Specific Comments

1. Page 1. Summary. The Portland Harbor Joint Source Control Strategy should be used as the main reference for the criteria comparison, and then, if additional criteria are needed, other references can be used.
2. Page 6. Conceptual Site Model. The Conceptual Site Model (CSM) should have a three dimensional pictorial depiction of the site, including the main contamination source areas and the extent of the formation from the areas upgradient of the site all the way into the river. This should also show all potential source areas, such as tank farm area, sewer lines, and any other significant characteristics of the site. In the report there is a box diagram (Figure 3) which is labeled Conceptual Site Model, but that model alone is too abstract, and does not provide the spatial relationships needed for visualization and geospatial environmental assessment decisions when used alone. In case it is not clear what the two types of CSMs that should be included, here are two links to examples of CSM for site assessment and remediation work -- http://www.triadcentral.org/ref/doc/3_Kira.pdf , or http://www.clu-in.org/download/char/SF_Rep_Samp_Guid_bio.pdf -- that go into more detail for conceptual site model development.
3. Page 7. Several statements are made in the first paragraph of this page that are inconsistent with the CSM that has been developed for the PH RI: (1) "Recreational users of the Willamette River are unlikely to contact sediments and shallow river water adjacent to the Site during swimming, and wading activities…these are therefore considered insignificant pathways." and (2) "Fish-eating humans and wildlife may be exposed to contaminants that have bioaccumulated in fish tissue; however, bioaccumulation is a watershed issue that is best evaluated in the context of the regional investigation currently underway by the LWG". Based upon these and other statements, no human health screening values are used in the report, including those in the JSCS.
4. Page 7. Contaminants of Interest (COIs). It is not clear why TPH for gasoline or jet fuel (or other kerosene grade petroleum hydrocarbons) are not included in COIs. All the major different types of substances handled historically at the facility should be listed in the report. Note that page 9 states that COIs include "TPH as diesel, oil, and gasoline".
5. Page 8. The following statement is inconsistent with the Portland Harbor Superfund site, "Chlorinated VOCs have not been identified as Willamette River target compounds by DEQ". VOCs are in the JSCS and being investigated by the LWG in the river.
6. Page 10. McCall Site. The report states that since 1955 there have been careful records kept of spills and releases at the facility. While that may be the case, such care has not been a reliable trait for defining plumes at most facilities, and therefore, the COIs and the locations for investigation should be based on complete analyses of soil, water, and waste materials at the site, together with historical handling of those substances. Unless this is the case, just relying on the recorded spills is probably not an acceptable assessment mechanism for groundwater.
7. Page 11. It is not clear what the statement "…the McCall RI data indicate the bunker C NAPL is not migrating, and will not migrate to the Willamette River" is based on. That conclusion must be based on data that is also presented in the report, and may also require on-going monitoring based on an acceptable plan.
8. Page 23. The Geoprobe data should be included in the screening tables.

9. Page 24. There is mention that "LNAPL is sourced from the bunker C release on Tube Forgings property", but there is little data or additional details or references to what is known about that release and whether it is contained or not, or having any secondary impacts. This probably will require that the area of study be increase to deal with that spill, and the different facilities work together to better characterize it and remediate it.
10. Page 26. It is unclear that there are two distinct plumes and not that there is a main plume and the area around MW-1 is just a portion of that plume. The contaminants shown in Figure 12 seem to be the same, just different concentrations which could be due to a number of reasons. Additional explanation of the two plume statement may be necessary to resolve this issue and its importance to the site.
11. Page 31, Section 7.1. The report refers several times to shoreline wells. It is unclear why those wells are more important than the other wells in the site. Only if those wells could be considered to be representative of the edge of a plume based on a number of factors (construction, depth of screens, period of sampling, location of plume upgradient, trends in concentrations, relationship in the gradients, etc.) could they be used to conclude that there is no contaminant discharge to the river.
12. Page 36. The report should have a follow up section to the ground water and stormwater discharge sections where the actual total flow and mass of discharges are presented. The report discusses the key inputs for these calculations, but the actual results do not get highlighted in the text. The actual total values from those calculations should be presented and compared to the "other sources in and around the harbor" (page 37). Note that Table 15 indicates that the average flow in million gallons per year (MGY) is 27 MGY for McCall stormwater and 19 MGY for groundwater. At a minimum that makes the ground water and the stormwater at the site comparable discharges.
13. Page 39. The Oregon DEQ October 2002 reference to background concentrations for metals should either be included as part of the report or the values table should be included in the report for direct comparisons by the reader. Note that there are new draft guidance values from ODEQ that should also be considered. These can be found at http://www.deq.state.or.us/wmc/pubs/docs/cu/GuidelinesAssessingBioaccumulativeChemicalsinSediment.pdf .
14. Table 6. There should be some additional work done to document since some of the high values of TPH are not correlated with other high concentrations of compounds normally found in TPH (such as benzene, toluene, and xylenes). While there are values for BTEX in Table 8, it is hard to determine whether those are from the same places where some of the high values of TPH for gasoline were detected. Also, it is hard to tell if the values for TPH correspond with areas where there may be NAPL and whether the concentrations are only from the dissolved water phase or from NAPL zones. Please specify where the samples were taken and whether there was any NAPL in that location that was not sampled.
15. Table 9. There appear to be very high values of copper in well MW-1, and in the past in wells MW-6, MW-7, and MW-8. It is not clear if there is a plume of copper leaving the site; this needs to be addressed in report and supported with field data. There are no data presented after the October 2004 data. Note that Figure 8.5 does indicate some elevated copper offshore of the McCall site, above the Harbor-wide Median Concentration.
16. Figures 8-1 through 8-11. The yellow shading in these figures is meant to define contributions from McCall. It is not appropriate to assume that constituents in sediments from RM 7.7 to 7.8 (slightly to the left of the shaded area) are not from McCall.

Additionally, some of these figures suggest that there may be sediment impacts from McCall for several constituents. Figure 8.5 does seem to indicate that there may be a copper impact from the McCall site, and the ground water data seems to also support that connection. Similarly with Figure 8.8 and methyl phenol, and Figure 8.9 and phthalates.

17. Figures 9 and 10. Interpretation of contaminant flow paths, based on the ground water contours, may indicate that MW-8 and MW-7 could miss the contamination which is at MW-6.
18. Figure 12 should incorporate the material from appendix A on the push probe characterization. It would make the interpretation more complete and support the conceptual site model.
19. There should be a figure which plots all the key parameters which are above the JSCS criteria on the uplands (water and soils in wells, push probes, and stormwater) and in the river environment. As presented the data is somewhat disconnected between graphs, cross-sections, and maps. This again should tie in with the conceptual site model presentation issue mentioned above.

If you have any questions or would like to discuss the contents of this letter further, please feel free to contact me at (206) 553-6705.

Sincerely,

Kristine Koch
Remedial Project Manager